(H) CLAIMS

We claim:

1. A composition for inducing thrombus formation comprising a binding agent having a first binding component and a second binding component, said first binding component comprising a binding region for binding the binding agent to a pre-determined site; said second binding component comprising a binding region for binding platelets.

2. The composition of claim 1 wherein the first binding component is an antigen binding site.

3. The composition of claim 2 wherein the first binding component is one or more binding agents selected from the group consisting of an antibody, a monoclonal antibody, a polyclonal antibody, a humanized monoclonal antibody, a chimeric antibody, a single chain antibody, a dimeric single chain antibody construct, a multimeric single chain antibody construct, a peptide, a nucleic acid sequence, a protein, a ligand, an oligonucleotide, conjugates that include any one of the above, fragments or parts of any of the above, and functional equivalents of any of the above.

4. The composition of claim 2 wherein the first binding component binds to a neo-eptiope.

5. The composition of claim 1 wherein the second binding component includes at least one of the components selected from the group consisting of von Willebrand factor, osteopontin, fibrinogen, fibrin, fibronectin, vitronectin, collagen, thrombospondin, laminin, heparin, heparan sulfate, chondroitin sulfate, phospholipase A2, matrix metalloproteinases, thrombin, glass, sialyl-lewis X, fibulin-1, PECAM, ICAM-1, ICAM-2, p-selectin ligand, MAC-1, LFA-1, portions of any of the above, and functional equivalents of any of the above.

6. The composition of claim 1 further comprising a platelet binding enhancer.

7. The composition of claim 6 wherein the platelet binding enhancer comprises at least one of ristocetin, platelet microparticles, and platelet membrane portions.

8. The composition of claim 1 further comprising a thrombus formation modulator.

9. The composition of claim 8 wherein the thrombus formation modulator is one or more enhancers selected from the group consisting of inhibitors of

fibrinolysis, inhibitors of anti-coagulant proteins, and tissue factor pathway inhibitor.

10. The composition of claim 9 wherein the anti-coagulant proteins include at least one of protein C, protein S, and anti-thrombin III.

11. The composition of claim 9 wherein the inhibitors of fibrinolysis include plasminogen activator inhibitors.

12. A method of inducing thrombus in vivo comprising:
capturing platelets at a selected site;
inducing activation of the platelets; and
allowing a thrombus to form.

13. The method of claim 12 wherein inducing platelets to collect at a pre-determined site comprises administering a targeting agent that specifically binds platelets.

14. The method of claim 13 wherein the targeting agent is one or more binding agents selected from the group consisting of an antibody, a monoclonal antibody, a polyclonal antibody, a humanized monoclonal antibody, a chimeric antibody, a single chain antibody, a dimeric single chain antibody construct, a

multimeric single chain antibody construct, a peptide, a nucleic acid sequence, a protein, a ligand, an oligonucleotide, conjugates that include any one of the above, fragments or parts of any of the above, and functional equivalents of the above.

15. The method of claim 14 wherein the targeting agent is a bifunctional binding agent.

16. The method of claim 15 wherein the bifunctional binding agent comprises a targeting component and a platelet-specific component.

17. The method of claim 16 wherein the platelet-specific component comprises at least one of the components selected from the group consisting of von Willebrand factor, osteopontin, fibrinogen, fibrin, fibronectin, vitronectin, collagen, thrombospondin, laminin, heparin, heparan sulfate, chondroitin sulfate, phospholipase A2, matrix metalloproteinases, thrombin, glass, sialyl-lewis X, fibulin-1, PECAM, ICAM-1, ICAM-2, p-selectin ligand, MAC-1, LFA-1, portions of any of the above, and functional equivalents of any of the above.

18. The method of claim 16 wherein the bifunctional binding agent comprises a moiety selected from one or more of the following: biotin mimetics, homophyllic peptides, and human Fc fragments.

19. The method of claim 16 wherein the targeting component binds to a ligand/receptor complex.

20. The method of claim 19 wherein the ligand/receptor complex is a growth factor/growth factor receptor.

21. The method of claim 20 wherein the growth factor/growth factor receptor is VEGF/VEGF receptor or a peptide mimetic of VEGF or VEGF-like molecule bound to the VEGF receptor.

22. A kit for inducing thrombus formation comprising a binding agent for targeting a pre-determined site and at least one of the following: a binding agent for binding platelets; a ligand for binding the binding agent; a ligand conjugate; an anti-ligand for binding the ligand or the ligand conjugate; a platelet binding enhancer; a thrombus formation modulator; a complement cascade component; a complement cascade component inducer; and a binding agent for binding platelets that includes an anti-ligand.

23. The kit of claim 22 wherein the binding agent for targeting a pre-determined site includes a binding component for binding platelets.

24. The kit of claim 22 wherein the binding agent for targeting a pre-determined site includes a ligand.

25. A method of treating cancer comprising:

capturing platelets at a selected vascular site near or on a tumor;

inducing activation of the captured platelets and forming a thrombus; and

occluding the vascular site with the thrombus.

26. A method of treating cancer comprising:

administering a binding agent capable of binding platelets

binding platelets to the binding agent to form captured platelets;

inducing activation of the captured platelets and forming a thrombus, whereby formation of the thrombus provides a therapeutic benefit.

27. A method of treating an undesirable condition comprising:

inducing platelets to collect at a pre-determined site;

activating the platelets, thereby forming a therapeutically beneficial thrombus.

28. A method of inducing thrombus formation comprising cooling a platelet suspension to between about 4°C and about 15°C; administering the cooled platelet suspension; capturing the platelets at a pre-determined site;

inducing activation of the platelets; and allowing a thrombus to form.